

Table 5

Flashing/Working/Breathing
Summit Production Facility
Ward County
Halcon Operating Co., Inc

API
RVP

Promax Tank Loss Stencil Input			
EPN		FLARE1	FLARE1
FIN		TK1-4	TK5-8
Number of Tanks		4	4
Tank Contents		Oil	Produced Water
Size	bbl	400	400
Tank Color		Beige	Beige
Location		Houston, TX	
Shell Length	ft	20	20
Shell Diameter	ft	12	12
Breather Vent Pressure	psig	0.03	0.03
Breather Vac Pressure	psig	-0.03	-0.03
Operating Pressure	psig	0	0
Avg. Percent Liquid	%	50	50
Max Percent Liquid	%	90	90
Net Throughput	bbl/day	2500	4500
Atmospheric Pressure	psia	14.70	14.7
Max Liq Surface Temperature	°F	99.50	79.20
VRU Downtime	%	5.00	5.00
Flare Control Efficiency	%	98.00	98.00
Flash Gas Oil Ratio	scf/bbl	1693.10	-

Components	Oil Tanks							Produced Water Tanks ¹						
	Wt % Flash Losses	Flashing Losses (ton/yr)	Working Losses (ton/yr)	Breathing Losses (ton/yr)	Total Losses (lb/hr)	Total Losses (ton/yr)	W/B Mass Fraction (%)	Flashing Losses (ton/yr)	Working Losses (ton/yr)	Breathing Losses (ton/yr)	Total Losses (lb/hr)	Total Losses (ton/yr)	Mass Fraction (%)	
Hydrogen	-	-	-	-	-	-	-	-	-	-	-	-	-	
Helium	-	-	-	-	-	-	-	-	-	-	-	-	-	
Nitrogen	1.03	0.96	-	-	-	0.96	0.00	0.01	-	-	<0.01	<0.01	0.00	
Carbon Dioxide	2.39	2.23	-	-	-	2.23	0.00	0.02	-	-	<0.01	0.02	0.00	
Hydrogen Sulfide	0.73	0.68	-	-	-	0.68	0.00	<0.01	-	-	<0.01	<0.01	0.00	
Methane	51.00	47.49	0.12	<0.01	0.12	47.62	1.19	0.47	<0.01	<0.01	0.11	0.48	1.19	
Ethane	12.87	11.99	1.00	0.05	1.05	13.04	10.11	0.12	0.02	<0.01	0.03	0.14	10.11	
Propane	12.98	12.09	1.83	0.09	1.92	14.00	18.51	0.12	0.03	<0.01	0.04	0.16	18.51	
i-Butane	2.39	2.23	0.48	0.02	0.50	2.73	4.84	0.02	<0.01	<0.01	<0.01	0.03	4.84	
Butane	7.10	6.61	1.89	0.10	1.99	8.60	19.21	0.07	0.04	<0.01	0.02	0.10	19.21	
i-Pentane	2.44	2.27	1.09	0.06	1.15	3.42	11.05	0.02	0.02	<0.01	0.01	0.04	11.05	
Pentane	2.17	2.02	1.25	0.06	1.32	3.34	12.70	0.02	0.02	<0.01	0.01	0.04	12.70	
Hexane	1.46	1.36	1.13	0.06	1.19	2.55	11.45	0.01	0.02	<0.01	<0.01	0.04	11.45	
Heptane	0.80	0.74	0.71	0.04	0.75	1.49	7.21	<0.01	0.01	<0.01	<0.01	0.02	7.21	
Octane	1.42	1.32	0.28	0.01	0.29	1.62	2.84	0.01	<0.01	<0.01	<0.01	0.02	2.84	
Nonane	1.14	1.06	0.07	<0.01	0.07	1.13	0.67	0.01	<0.01	<0.01	<0.01	0.01	0.67	
Benzene	0.00	0.00	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Ethylbenzene	0.00	0.00	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Toluene	0.00	0.00	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
m-Xylene	0.00	0.00	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Decanes	0.07	0.07	-	-	-	0.07	0.18	<0.01	<0.01	<0.01	<0.01	<0.01	0.18	
Undecane	-	-	0.02	<0.01	0.02	0.02	0.05	0.00	<0.01	<0.01	<0.01	<0.01	0.05	
C12+	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	0.00	<0.01	<0.01	<0.01	<0.01	<0.01	
TOTAL UNCONTROLLED LOSSES ¹ :	-	93.12	9.86	0.51	10.37	103.49	100.00	0.93	0.19	<0.01	0.26	1.12	100.00	
TOTAL UNCONTROLLED VOC LOSSES:	-	29.77	8.75	0.45	9.19	38.97	88.70	0.30	0.17	<0.01	0.11	0.47	88.70	
TOTAL CONTROLLED VOC LOSSES:	-	2.98	0.87	0.05	0.92	3.90	8.87	0.03	0.02	<0.01	0.01	0.05	8.87	

¹ Total flashing losses based on Gas-Oil Ratio from site specific analytical data

VOC PTE for all tanks = 3.90 + 0.05 = 3.95 tpy, which is <6tpy per tank; therefore, the tanks are not an affected source under NSPS OOOOa